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# GOALS for SCIENCE and EDUCATION in the U.S. DEPARTMENT of AGRICULTURE

SCIENCE AND EDUCATION  
IN AGRICULTURE



A Summary of the Proceedings  
of a Goal-setting Conference  
Held at the National 4-H Club  
Foundation in Bethesda, Md.,  
February 12-14, 1969

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#### FOREWORD

This report of objectives, goals, and activities was developed to show how agencies involved in the science and education activities of USDA contribute as a group and individually to the goals of the Department. The statements are deliberately broad and do not contain time requirements in the achievement of objectives.

The report provides a descriptive framework of both current and projected efforts. Much of the material presented is a restatement of existing goals and activities. Nevertheless, there are many recommendations which serve as challenges to innovate, even within existing budget and personnel limitations.

Agency personnel are requested to review this report in detail and develop plans for implementing the goals and activities that apply to them, with particular emphasis on efforts that differ from current ones. The plans should include dates for attainment of specific goals.

Important to the proper development of agency plans is the participation of program managers throughout each agency. This will take time. Therefore a time schedule for reporting the plans, commensurate with organization size and complexity, will be worked out with each agency head.

Many of the recommendations require initiative on the part of the Office of Science and Education. We will implement these through actions at meetings of the Science and Education staff.

Ned D. Bayley  
Director  
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## I. THE GOAL SETTING CONFERENCE

The Science and Education (S&E) Goal Setting Conference of the USDA was held February 12-14, 1969, at the National 4-H Club Foundation in Bethesda, Maryland. It involved the administrators, the deputy administrators, and, in some cases, the assistant administrators of the following agencies: Agricultural Research Service, Cooperative State Research Service, Economic Research Service, Farmer Cooperative Service, Federal Extension Service, Forest Service, National Agricultural Library, and Statistical Reporting Service.

Representatives from several Land-Grant universities were invited, not only for the contributions to the conference that they could be depended on to make, but also to strengthen the traditional bond between USDA and the universities and to bring university personnel up to date on current S&E activities. University representatives attended from the Association of State College and University Forestry Research Organization (ASCUFRO), the Extension Committee on Organization and Policy (ECOP), the Experiment Station Committee on Organization and Policy (ESCOPE), the State Agricultural Experiment Stations (SAES), the State Cooperative Extension Services (SCES), and the Resident Instruction Committee on Organization and Policy (RICOP).

The purpose of this goal setting conference was twofold:

To have the top management of USDA agencies engaged in S&E activities participate in the setting of goals; and,

To stimulate new thinking among management on how to achieve goals.

Conference participants were assigned to work groups prior to the conference. Each work group developed tentative objectives, goals, and activities statements. These statements were discussed and rewritten during the conference; they form the basis for this report.

## II. USDA'S ROLE IN SCIENCE AND EDUCATION

American agriculture depends on knowledge for its development. Agricultural science and extension programs help supply this knowledge.

USDA is the Federal focus for the work. The State Land-Grant University is the focus in each State. Historically, the two have enjoyed excellent cooperative relationships in planning, conducting and evaluating programs.

The Department of Agriculture is committed to helping provide scientific knowledge and technical assistance and to disseminate it among people who themselves can take action to make a strong and viable rural America. Such action helps promote economic opportunity, social justice, and individual development, and contributes to the general well-being of all Americans.

### III. SCIENCE AND EDUCATION - RESPONSIBILITIES AND ORGANIZATION

#### A. RESPONSIBILITIES

Science and Education in agriculture is a partnership of USDA, the Land-Grant universities, business and industry, and foundations. It serves consumers; rural America; the food, agricultural, and forestry industries; and the action programs of Federal, State, and local governments. It also furthers the advancement of scientific knowledge and helps to maintain and enhance the quality of the human environment.

1. Research. S&E research is aimed at 1) making discoveries, 2) evaluating alternative ways of attaining goals, and 3) providing technical information.
2. Education. S&E education efforts include the following:
  - a. Extension services at each Land-Grant university, to provide a focal point for rural education programs.
  - b. Library services such as the National Agricultural Library, which classifies, stores and circulates documents in cooperation with other libraries, and provides resource services for individuals and public and private groups.
  - c. University educational and training programs to improve the supply of competent and skilled professional people.
  - d. Discussion groups through which the pro's and con's of policy issues can be discussed and more fully understood as a basis for USDA programs.
3. Interdepartmental Committees. Members represent the Department on Federal interdepartmental committees such as the Federal Council on Science and Technology, the Committee on Academic Science and Engineering, the Federal Interagency Committee on Education, etc.

4. National Advisory Committees. The Director of S&E serves as chairman or co-chairman of two National advisory committees: The Agricultural Research Policy Advisory Committee, and the National Agricultural Research Advisory Committee.
5. National Association of State Universities and Land-Grant Colleges. The Office of S&E maintains close liaison with the office of the National Association of State Universities and Land-Grant Colleges.

## B. ORGANIZATION

1. Direct and Coordinative Responsibilities. The Office of Science and Education has direct and coordinative responsibility for the following agencies of the Department that carry out research and educational programs.
  - a. Research agencies (direct responsibility)
    - 1) Agricultural Research Service
    - 2) Cooperative State Research Service
  - b. Research agencies (coordinative responsibility)
    - 1) Economic Research Service
    - 2) Forest Service
    - 3) Farmer Cooperative Service
    - 4) Statistical Reporting Service
    - 5) All others
  - c. Research Program Development and Evaluation Staff. This staff provides the Director of Science and Education with services needed in regard to research coordination, development, evaluation, documentation and reporting. The staff also includes the secretariat for the research advisory committees.
  - d. Educational agencies (direct responsibility)
    - 1) Federal Extension Service
    - 2) National Agricultural Library
  - e. Agencies with which S&E maintains liaison
    - 1) Graduate School
    - 2) Office of Personnel
    - 3) All other training and educational groups

2. Action Agency Relationships.

- a. S&E staff members serve on various Departmental "task forces" and other committees, studying problems and reporting pertinent research.
- b. All agencies of the Department work with the Office of S&E on matters of mutual concern. S&E agencies have a number of instruments of understanding and working agreements with other agencies in the Department.

IV. PROGRAM OBJECTIVES, GOALS, PLANS, AND ACTIVITIES

A. OVERALL PROGRAM DIRECTIONS AND GOALS FOR USDA AGENCIES IN SCIENCE AND EDUCATION

Objectives:

S&E's contribution to national goals is scientific knowledge, the dissemination of knowledge, and the organization of people in self-help utilization of that knowledge. The knowledge provided is used by people to build a strong rural America, to improve the efficiency of the industry, to contribute to the general well-being of all Americans and to assist developing countries.

Agriculture is changing rapidly. It is becoming more specialized, more integrated, and more sensitive to technological advances. Questions of efficiency, wise use of resources, and fair distribution of returns are becoming more and more critical as we seek to provide adequate supplies of food and fiber to consumers and assure equitable returns to producers.

The impact of change extends to aspects of rural life other than agricultural production, opening up broad opportunities for S&E to develop and disseminate information and to help people to help themselves.

Goals:

1. Ensure a stable and productive agriculture for the future through wise management of renewable natural resources.
2. Protect forests, crops, and livestock from insects, diseases, and other hazards.

3. Produce an adequate supply of farm and forest products at decreasing real costs.
4. Develop new and improved farm and forest products and processes and improve product quality.
5. Help improve the structure and efficiency of the agricultural industry.
6. Help people in developing nations improve their agricultural efficiency.
7. Expand export markets in food and fiber and improve conditions for rational development and trade in world agriculture.
8. Protect consumer health and improve nutrition of the American people.
9. Improve economic opportunities in rural America.
10. Promote improvement of recreation, environment, and public services.
11. Improve family living and contribute to the development of American youth.
12. Aid disadvantaged groups, institutions, and individuals who are a part of or who can contribute to the improvement of rural America.
13. Enhance the national capacity to develop and disseminate new knowledge.

Plans and Activities:

Plans for achieving these goals are as follows:

1. The USDA-university-industry partnership of science and education should be strengthened.
2. All the components of the national S&E system--Federal, State, and university, as well as industry and other private organizations--should be encouraged to contribute to overall objectives.

3. Resources should be allocated so as to help cooperating institutions improve their ability to contribute to the national welfare.
4. Every effort should be made to improve the lot of minority groups. For example:
  - a. Negro Land-Grant colleges should be encouraged to take part in the planning and development of S&E programs.
  - b. Minority-group and handicapped individuals employed by S&E should be given every opportunity for self-improvement and advancement; S&E supervisors should be taught and encouraged to work effectively with minority groups.
  - c. New authority for grants and fellowships should be sought in order to enlarge USDA's ability to aid minority-group institutions; also to help minority-group individuals qualify for positions in USDA, particularly at professional levels.
5. As opportunities and new responsibilities arise, emphasis should be shifted from existing programs to programs that are more responsive to scientific innovation and also to long-range national goals.

#### B. POLICY CHOICES AND SUPPORT FOR ACTION

S&E is the principal source of the scientific knowledge that is needed by the action agencies of USDA. In addition, it can contribute much to the formulation of USDA policy.

##### Objective:

S&E should try to help educate citizens on the problems and choices that go into developing USDA policy in order to bring about a better understanding of USDA programs throughout the Nation, enhance the benefits, and increase the effectiveness of the Department's action programs.

##### Goals:

S&E should:

1. Assist in the development of Department policies by providing data on issues, alternatives, and consequences.

2. Furnish technical information to action agencies to help them in their programs.
3. Confer regularly with action agencies on how problem policies can be solved.
4. Disseminate information and provide local leadership in study and development of public policy.

Plans and Activities:

S&E should:

1. Examine its present effectiveness as an influence on Department policy.
2. Determine what S&E services the Office of the Secretary and the action agencies need most for formulation of sound policy.
3. Establish priorities for those S&E activities that support action-agency needs. For example, Extension-sponsored community discussion groups could be organized to discuss some aspect of farm policy; the results could be compiled and sent to the Office of the Secretary for use in policy development.

C. GOALS FOR AGRICULTURE

Objectives:

Agriculture includes farm production and the businesses engaged in serving and supplying farmers and consumers.

Agricultural research and extension goals, therefore, encompass more than the production, transformation, and movement of farm and forest commodities. They include also economical food costs to the consumer, with special attention and assistance to low-income people; equitable returns to those working and investing in the agricultural system; and better methods of feeding the hungry people in underdeveloped countries.

The overall objective is to provide the knowledge, technology, and information to enable those engaged in agriculture to serve the food and fiber needs of the public efficiently while bringing a fair share of economic and social returns to producers and marketers for their investment and labor.

Goals:

1. Help ensure equitable incomes and returns for those working and investing in agriculture.
2. Improve agricultural efficiency in the areas of marketing and processing, as well as production.
3. Promote widespread understanding of farming and the factors that influence the level and the efficiency of agricultural and forestry production.
4. Improve the performance of agricultural markets and help to develop efficient marketing arrangements, including farmer cooperatives and other types of group marketing activities.
5. Encourage the generation and development of new products and new or expanded markets.
6. Develop improved methods of disposing of agricultural wastes; look for ways to keep industrial and municipal wastes from contaminating the rural environment.
7. Improve the quality of resources in agriculture by developing better resource management techniques.
8. Help develop effective public policies consistent with the goals of Science and Education.
9. Improve satisfaction in farming.

Plans and Activities:

1. In cooperation with the universities, delineate those areas requiring research and education; determine how much support, public and private, is available for each. This continuing process will make possible periodic adjustments in research and extension activities.
2. Increase the use of interdisciplinary team approaches for problem solving and for creating research and education programs and activities.
3. Increase the use of the "systems approach" in research and education; study "subsectors" (vertical slices) rather than a single commodity.

4. Experiment with new approaches and combinations in planning coordinated research and education. USDA should provide staff services for joint planning and implementation by its own agencies, the universities, and industry.
5. Provide for organizational flexibility in research and education, so that solutions can be sought along disciplinary, interdisciplinary, or "problem" lines, as circumstances dictate.

#### D. RENEWABLE NATURAL RESOURCES AND ITS INDUSTRIES

Renewable natural resources and its industries here refers to USDA responsibilities with natural resources outside the sphere of agricultural responsibilities. S&E agencies provide information, ideas, and techniques that support natural resource programs of USDA, other Federal agencies, State and local organizations, and private enterprise. Research and extension accomplishments help public and private interests to increase their efficiency in resource management, reduce adverse resource requirements and practices, create natural resource investment opportunities, and improve price stability.

##### Objectives:

The principal S&E objectives in resource management are:

1. To increase man's ability to manage renewable resources.
2. To develop the Nation's renewable natural resources for the use and enjoyment of both urban and rural America.
3. To see to it that research and extension information is put to use by USDA action agencies--Soil Conservation Service, Agricultural Stabilization and Conservation Service, Forest Service, and others.
4. To improve resource management and conservation in the developing nations of the world, and to strengthen world markets for natural resource products.

##### Goals:

Some resource management goals that might be pursued by S&E are as follows:

1. Provide the knowledge and technology necessary for wise and efficient use of the Nation's renewable resources,

including range, forage, soil, water, timber, and other forest products, and fish and wildlife.

2. Devise programs aimed at improving the total natural resource environment: forests, grasslands, and related waters, wilderness areas, parks, and scenic attractions.
3. Promote the concept and develop techniques of multiple use management of natural resources, both by finding areas where the concept can be put to use and by explaining to the public why multiple use must be practiced.
4. Enhance the institutions that govern resource use including 1) water law and water transfer arrangements, 2) rural zoning and other land-use regulations, 3) the organization and operation of resource districts and interstate compacts and their effectiveness in solving resource management problems, and 4) the rights and responsibilities of the landowner in the development of resource management plans.

Plans and Activities:

1. Formulate in cooperation with USDA and universities long-range plans for natural resources research program.
2. Explore ways to develop a continuing dialogue between S&E research and extension and between USDA, the States, and public and private agencies concerning the technology and information needed to carry out renewable natural resource action programs.
3. Search for additional ways to involve private enterprise in conservation and natural resource management, including determination of research and technical needs.
4. Work to shorten the gap between scientific discovery and practical application of the discovery in solving problems of natural resource management.

**E. MANAGING THE ENVIRONMENT**

Concern for quality of the environment continues to grow among administrators of every agency of Government. USDA is deeply involved in many aspects of the problem.

Environmental quality, good or bad, depends on how well man manages his environment. The human race alters the environment in some

degree in almost every action it takes. People must realize, then, that their actions--for good or ill--will determine the quality of the environment that they have to live in. Problems of environmental quality arise only when the policies of management are not adapted to the maintenance of quality. These problems may be classed as the "mistakes" in environmental management.

Objective:

S&E's objective in environmental management is to provide such technical knowledge and educational know-how as is needed for wise management, and in so doing to help ensure a wholesome and satisfying environment for all citizens.

Goals:

S&E goals in environmental management are as follows:

1. Determine how human activities create environmental change.
2. Develop monitoring techniques that will tell us what effect these changes have on soil, water, air, light, and other features of the environment.
3. Develop ways to modify or correct practices that are harmful to the environment.
4. Educate the public to the problems involved and to the various ways of correcting them.
5. Provide mechanisms whereby the programs of USDA and other conservation-oriented agencies can be coordinated with similar activities in business and industry.

Plans and Activities:

1. In cooperation with the universities, establish research priorities for the various problems affecting land, forests, and other natural resources; evaluate the priorities from time to time to make sure that they are in the best interests of the Nation as a whole.
2. Increase multidisciplinary research related to sound management of the environment.
3. Expand educational programs based upon research results, so that the average citizen will get a better understanding of the importance of environmental management techniques.

## F. COMMUNITY DEVELOPMENT

Community development can be defined as the application of knowledge for the greater realization of human potential. The fruits of knowledge are not available equally to all people in all communities; it shall be S&E's purpose to help rectify this inequity by improving our knowledge of community development and by making technical know-how and organizational skills available in communities where these qualities are in short supply.

### Objectives:

As S&E agencies, our objective in community development is to expand our understanding in three general areas:

1. Determine what types of community development efforts are needed most.
2. Try to understand what makes people think as they do, and strive to put this understanding to work in promoting a stronger community.
3. Expand research efforts to understand social pressures and other factors that affect the behavior of the individual in a community.
4. Encourage the application of all available knowledge by groups and individuals interested in improving the quality of life in their communities.

### Goals:

1. Establish research priorities in cooperation with the universities.
2. Increase research for the effective development of human resources.
3. Emphasize the role of research in community development, so that the best available knowledge and technology can be brought to bear on community problems.
4. Conduct research to determine the similarities and differences between rural and urban community problems.

5. Encourage leaders to assess their communities in terms of problems, needs, opportunities, and potentials; analyze each leader's attitudes, his willingness to accept change, and his ability to utilize innovations.
6. Teach local community leaders established organizational techniques in working so that they will be able to give direction to community development efforts.
7. Provide guidance to local groups and individuals in the evaluation of alternative courses of action and specific developmental projects.

Plans and Activities:

1. Collect existing knowledge on community development as a basis for establishing research priorities.
2. Encourage the expansion of undergraduate and graduate programs in community development, to increase the number of qualified personnel in the profession.
3. Inventory the deficiencies in community facilities and essential social services in rural America, including differences between areas.
4. Study the cost of providing such services.
5. Devise strategies for raising money for development--from foundations, industry, and other sources.
6. Reexamine the division of powers among Federal, State, and local governments with an eye toward speeding up aid to disadvantaged communities.
7. Assist local groups in interpreting existing information about their community, and in obtaining and analyzing new information to help them understand and evaluate their community resources and their problems, opportunities, and goals.
8. Assist local groups in understanding the broad social and economic context in which their community operates and within which development must take place.

9. Conduct a wide range of educational activities to develop the ability of local people to take positive constructive action with respect to opportunities to improve their communities.

#### G. HELP FOR THE DISADVANTAGED AND THE ALIENATED

##### Objectives:

S&E leaders recognize the need to help disadvantaged and alienated people. S&E programs for the disadvantaged will include research to improve food, clothing, and housing; and educational efforts to help the disadvantaged cope with problems of nutrition, migration, and other difficulties. Urban as well as rural people will be helped.

##### Goals:

It is an S&E goal to reduce the number of disadvantaged and alienated people from its present level--roughly 20 million. To this end, S&E will:

1. Consolidate existing knowledge and develop new knowledge on the social, economic, and psychological problems of low-income living.
2. Teach skills to disadvantaged working men that will help them get better jobs.
3. Improve communication between the disadvantaged and the general public.
4. Help the disadvantaged develop businesses and other enterprises that will improve their economic well-being.

##### Plans and Activities:

1. Assist the action programs for providing food to disadvantaged families and provide them with information on the basic requirements for good nutrition.
2. Provide birth control information and material to females.
3. Make 4-H activities available to disadvantaged youth, to increase their opportunities for personal development.

4. Provide materials on nutrition to be used in public school systems.
5. Help and encourage the mass media to bring the problems of the disadvantaged before the general public.

## H. HUMAN NUTRITION

### Objective:

The objective of S&E activities in the field of human nutrition is to assure adequate nutrition for all people in the United States regardless of age, race, or income. Adequate nutrition means enough food to provide for the full development, health, and longevity of individuals.

### Goals:

Following are some S&E goals in nutrition:

1. Develop ways to assure adequate nutrition, especially for all low-income people.
2. Increase the knowledge and understanding of the food requirements of people of all ages and conditions.
3. Assess nutritional values of farm products and food preparations.
4. Improve nutrient quality of farm products and food preparations.
5. Improve knowledge of the relationships between diet, safe foods, and health.
6. Increase understanding of factors affecting habits of people in buying and using food.
7. Help develop a more effective and efficient food production, processing, and distribution industry.
8. Explore new foods and processes for foods, and assess their applicability in meeting the needs for food.
9. Improve knowledge of such factors affecting food consumption as types of food, levels of income, geographic location and ethnic background of people.

10. Establish more effective participation with other public and private agencies and institutions having similar objectives and goals.

Plans and Activities:

The actions required to further our objective are as follows:

1. Maintain a continuing appraisal of the state of food consumption and nutrition, with emphasis on such research among low-income people.
2. Appraise the present state of knowledge concerning requirements for nutrients by ages and life conditions of people, and direct new research toward filling gaps in current knowledge.
3. Maintain and increase, as necessary, research to appraise nutritional values of foods available for consumption.
4. Expand and initiate, as needed, research and education to help improve effectiveness and efficiency of the food industry.
5. Initiate research to better understand economic and social factors affecting food buying, storage, preparation, service, and consumption as a guide to education and food distribution programs.
6. Show people why they need to improve their food buying, storage, and preparation habits. Such information should deal both with underfeeding and overfeeding.
7. Initiate research to appraise new foods and processes for food production.
8. Evaluate the effectiveness of our food policies and of food distribution and education programs.
9. Promote more effective cooperative efforts in the exchange and extension of information with other public and private agencies involved in food and nutrition.
10. Expand and improve programs in nutrition education in the Department, Land-Grant universities and related institutions.

## I. INTERNATIONAL PROGRAMS

Solving the world's food shortages will require the concerted effort of all nations. S&E scientists and teachers are uniquely qualified for leadership roles in this effort.

### Objective:

To promote economic stability throughout the world by improving agricultural productivity in developing countries.

### Goals:

1. Strengthen the research and educational institutions of developing countries.
2. Enlist agribusiness and other private sources in providing services needed by developing countries.
3. Participate in international forums in an effort to promote world trade.
4. Develop a system for worldwide collection of agricultural information.

### Plans and Activities:

1. Help underdeveloped nations develop a few crops with potential for relatively quick increase in production, so that food shortages of the present and the near future can be eased.
2. Train research and extension specialists in underdeveloped countries.
3. Support the Food and Agriculture Organization in the development of a world census of agriculture.

## J. AGRICULTURE'S NETWORK FOR KNOWLEDGE

One of the most significant aspects of the 1965 Education Act is the amendment that deals with electronic accumulation and transmission of data--the so-called network for knowledge. The amendment authorizes Federal support for closed-circuit television networks and other sophisticated methods of storing and transmitting information. S&E, through its affiliations with Land-Grant

colleges and with the National Agricultural Library, is in an excellent position to help with the design and development of a network for knowledge.

Objective:

S&E agencies should:

1. Assess the costs and operating expenses of various network systems.
2. Consider possible uses that S&E agencies and universities might have for advanced communication technology.
3. Determine the organizational structure that would be required for a knowledge network.

Plans and Activities:

The National Agricultural Library should take the lead in organizing a communications system involving USDA and the Land-Grant universities; this system would aid the efforts of agricultural scientists and educators throughout the world and could serve as a prototype for all modern telecommunication enterprises. Specifically, the National Agricultural Library should:

1. Collect worldwide literature relating to agriculture.
2. Disseminate this information to cooperating universities.
3. Expand agricultural library services through automation.
4. Establish liaison between the National Agricultural Library and associated public service agencies.

V. OTHER IMPORTANT FUNCTIONS AND REQUIREMENTS

A. PERSONNEL DEVELOPMENT

Objectives:

S&E management at all levels should:

1. Develop worker understanding of program objectives.
2. Encourage individuals to accept responsibility.

3. Encourage individual initiative.
4. Establish organization development programs that provide for continuing growth of the individual.
5. Encourage employees, especially those belonging to minority groups, to take advantage of self-improvement programs.

Goals:

1. Establish and place high priority on a comprehensive orientation program for new employees.
2. Maintain a continuous self-improvement program for all employees.
3. Get agreement between supervisors and employees on what training programs are needed.
4. Establish a continuing education program aimed at keeping professionals up to date.
5. Recognize outstanding performance by employees in research and management skills.

Plans and Activities:

1. Make sure that each agency has a statement of purpose and a plan for orientation and development of employees.
2. Have each employee and his supervisor develop written goals for self-improvement.
3. Ensure that each agency has a fair system whereby supervisor and employee discuss employee performance.
4. Develop a system that will help identify outstanding individuals early in their careers and provide for their training for increased responsibility.
5. Develop a program for exchange of professionals between USDA agencies and universities.
6. Work with universities and with other government agencies to get a standardized equal employment opportunities program.

## B. MANAGEMENT INFORMATION SYSTEMS

Modern management requires considerable exchange of information. In recent years, automatic data processing has come into use to speed the collection and dissemination of data within Government agencies. S&E is already doing some of this and will do more.

### Objectives:

1. To provide each level of S&E management with all the information that it needs to plan and execute its programs.
2. To provide the S&E management with information on availability of financial resources and other factors that might have an effect on the overall S&E program.
3. To eliminate costly and annoying repetitions in data collection and reporting.
4. To ensure availability of appropriate scientific and technical data.

### Goals:

1. To provide S&E data to USDA management in a form comparable to reports from other agencies.
2. To foster efficient exchange of information between programs within S&E as well as between S&E and its various State affiliates.
3. To keep the cost of information exchange at a minimum.

### Plans and Activities:

1. The suggestion should be made to the Office of the Secretary that Department-wide coordination is needed for development of an economical, efficient management information system.
2. The management of each S&E agency and major staff group should be served by a management information system (agencies having similar needs might be served by a single system).

3. The various agency systems should be sufficiently standardized so that information from all of them can be brought together in unified reports for use by top USDA management.
4. Some planning should be done to integrate S&E management information systems with those of other Government agencies and with the Land-Grant universities.

### C. FACILITIES

#### Objectives:

S&E management must provide facilities which will encourage employees to do their best work. Multipurpose facilities should be developed that can be used by USDA employees, university personnel, and other S&E collaborators. New ways of administering and financing facilities--in cooperation with State governments or universities, for example--should be considered to meet the increasing needs of a growing research and education effort.

#### Goals:

1. Provide adequate facilities for S&E personnel.
2. Modernize inadequate facilities.
3. Make maximum use of existing facilities.

#### Plans and Activities:

1. Collect information on existing and proposed facilities throughout the S&E State-Federal complex.
2. Make sure the building plans make effective use of academic communities--Land-Grant colleges and others.
3. Provide each senior scientist with a private office; explore the possible modification of Federal space requirements.
4. Work closely with the General Services Administration in providing S&E facilities.

#### D. USDA-SCIENTIFIC COMMUNITY-INTERGOVERNMENTAL RELATIONS

##### Objective:

S&E should participate in and provide leadership as appropriate in all government, industrial, and professional research or education programs that have anything to do with agriculture or natural resources.

##### Goals:

1. Report the many important scientific achievements of S&E scientists to scientists in industry and in other phases of government, as well as to the general public.
2. Make sure that S&E scientists receive scientific and technical information and opinions from other scientists.
3. Encourage participation by S&E scientists in governmental and nongovernmental scientific and professional organizations and meetings.
4. Assure recognition for achievements of S&E scientists.

##### Plans and Activities:

###### S&E should:

1. Maintain a staff of competent scientists and employ them in ways that will be of most benefit to themselves, their employers, and the public.
2. Encourage each scientist to make public the achievements of his agency as well as reports of his own research.
3. Continue to call on the National Academy of Sciences-National Research Council for advice on important scientific questions and increase S&E working relations with the Agricultural Board.
4. Encourage innovation among individual scientists in order to ensure the continuing growth of imaginative research programs.

## E. USDA-INDUSTRIAL AND CONSUMER RELATIONS

### Objective:

In order to function efficiently, S&E must strive to win the support of leaders in business and industry and the general public as a whole.

### Goals:

1. Tell industry what S&E does for them.
2. Increase the amount of agricultural information carried by mass media.
3. Help S&E researchers publish in widely read science journals.
4. Promote contact between scientists and the general public.
5. Help develop science curricula for use in primary and secondary schools.

### Plans and Activities:

1. Develop an inventory of agribusiness clients who regularly use S&E services, so that these clients can be easily reached.
2. Ascertain from agency experience the communication techniques that have been most successful and intensify and broaden their use.
3. Expand the use of clinics and conferences, such as already have enjoyed some success in the cotton and rice industries, to bring together individuals from business, industry, Government, and commodity groups; restructure the Commodity Advisory Committees--the present link between research and industry--along the lines of conferences.
4. Hold an annual conference in Washington aimed at improving industrial relations.
5. Maintain contacts with members of the popular press and supply them with stories and information of interest to the general public.

6. Furnish scientists with editorial guidance so they can get their material published in wide-circulation journals.
7. Hold open house events in laboratories to acquaint citizens with the world of research.
8. Encourage school officials to get in touch with S&E for science classroom materials.

#### F. SCIENCE AND EDUCATION BUDGETING

S&E budgeting procedures should be designed to improve decisions in budget development by the systematic evaluation and selection of alternatives.

##### Goals:

1. Develop more effective budget treatments for S&E within the Planning, Programming, Budgeting System.
2. Provide timely budget information relevant to executive policy.
3. Intensify efforts to develop improved long-range plans for research and education.
4. Give full consideration to needs of cooperating universities and involve them in joint budget planning to the fullest extent allowable within existing regulations.

##### Plans and Activities:

1. Establish separate budget categories for research and for education.
2. Make S&E budget procedures compatible with the Planning, Programming, Budgeting System.
3. Develop better ways to present S&E needs to Congress, so that the message will be clear and convincing.
4. Allow sufficient time (up to 21 months) for preparing effective supporting materials for use in developing the S&E budget message.

5. Work with the Office of Budget and Finance, the Planning Evaluation and Programming Staff, and the Bureau of the Budget on ways to eliminate duplication and reduce the paperwork of budget preparations.
6. Use long-range plans for research, extension, and the National Agricultural Library as guidelines in preparing the budget.

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